EQUITY | EXPLORATION CONSULTANTS LTD.

# GeoSpark Logger ~ Drill Log

**Project:** KZK **Hole Number:** K16-380

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Prospect: | GP4F | Hole Type: | DD | Survey Type: | RTK DGPS | Logged By: | Rob Duncan |
| Grid: | NAD83_Z9 | Hole Diameter: | 75.7 | Survey By: | Challenger_Survey | Date Logging Start: | 7/5/2016 |
| UTM Easting | 419400.06 | Core Size: | NQ3 | Azimuth: | 180.3 | Date Logging Complete: | 7/10/2016 |
| UTM Northing: | 6813385.518 | Casing Pulled?: | Yes | Dip: | -80.1 | Drill Company: | New Age |
| UTM Elev. (m): | 1365.627 | Casing Depth (m): | 7.5 | Length (m): | 323.7 | Drill Rig: | Zinex A5 |
| Local Easting: | | Stored?: | Yes | Claims Title | | Drill Started: | 7/4/2016 |
| Local Northing: | | Cemented?: | Yes | Core Storage Loc.: | KZK Camp | Drill Completed: | 7/9/2016 |
| Local Elev. (m): | | | | Hole Completed?: | Completed | Purpose: | Resource Definition |
| | | | | | | Parent Hole: | |

Comments:

K16-380 was designed to infill between existing GP4F drill holes to provide confidence for upgrading the resource. The drillhole intersected the main GP4F lens as predicted from 153.26-159.70 m, below the blue qtz eye marker unit. Mineralization, with the exception of one thin band of OF type mineralization, consisted of OJ type proximal alteration with minor sulfides. A thin lens of OB mineralization (164.3-164.77 m) was intersected below a PEL unit that separates the two lens. Discontinuous disseminated and thin foliaform qtz - sulfide bands (typically <0.5 cm thick and spaced 0.25-0.5 m) was intersected from 229.50-250.00 m. Intensely chlorite altered units, with sharp contacts were intersected at 282.91-284.31 m, 287.67-288.30 m and 308.90-314.53 m. The lowermost unit contains garnets and traces of chalcopyrite. These chlorite units are thought to be altered pelitic horizons based on the presence of calcite and remnant biotite. The drill hole ends in faulted rhyolite with minor mudstone (and missing core).

***Downhole Surveys:***

| Depth (m) | Dip | Measured Azimuth | Correction Factor | Corrected Azimuth | Survey Type | Survey By | Survey Date | Mag Field | Accept Values? | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -80.1 | 178.9 | 1.4 | 180.3 | TN14 | Rob Duncan | 7/4/2016 | | ☑ | |
| 5 | -79.31787 | 177.43153 | 1.4 | 178.83153 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 10 | -79.16366 | 178.13539 | 1.4 | 179.53539 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 15 | -79.06379 | 178.97673 | 1.4 | 180.37673 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 20 | -78.95216 | 179.63126 | 1.4 | 181.03126 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 21 | -79.5 | 160.1 | 22.1 | 182.2 | ReflexEZS | New Age | 7/5/2016 | 5743 | ☐ | |
| 25 | -78.92341 | 179.74013 | 1.4 | 181.14013 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 30 | -78.88871 | 179.42295 | 1.4 | 180.82295 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 35 | -78.84928 | 179.14298 | 1.4 | 180.54298 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 40 | -78.80321 | 179.35273 | 1.4 | 180.75273 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 45 | -78.78297 | 179.74336 | 1.4 | 181.14336 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 50 | -78.78192 | 179.8039 | 1.4 | 181.2039 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 54 | -78.9 | 158 | 22.1 | 180.1 | ReflexEZS | New Age | 7/5/2016 | 5740 | ☐ | |
| 55 | -78.72972 | 179.80197 | 1.4 | 181.20197 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 60 | -78.60363 | 179.5 | 1.4 | 180.9 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 65 | -78.46751 | 179.00349 | 1.4 | 180.40349 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 70 | -78.48407 | 179.27195 | 1.4 | 180.67195 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |

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| Depth (m) | Dip | Measured Azimuth | Correction Factor | Corrected Azimuth | Survey Type | Survey By | Survey Date | Mag Field | Accept Values? | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | -78.37516 | 179.03588 | 1.4 | 180.43588 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 80 | -78.17629 | 179.18584 | 1.4 | 180.58584 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 85 | -78.1216 | 179.7669 | 1.4 | 181.1669 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 87 | -77.3 | 158.8 | 22.1 | 180.9 | ReflexEZS | New Age | 7/6/2016 | 5755 | ☐ | |
| 90 | -78.00147 | 179.92046 | 1.4 | 181.32046 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 95 | -77.78286 | 180.24439 | 1.4 | 181.64439 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 100 | -77.51326 | 179.97877 | 1.4 | 181.37877 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 105 | -77.25423 | 180.42381 | 1.4 | 181.82381 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 105.01 | -77.3 | 157.1 | 22.1 | 179.2 | ReflexEZS | New Age | 7/6/2016 | 5734 | ☐ | |
| 110 | -77.22148 | 180.04727 | 1.4 | 181.44727 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 115 | -77.11946 | 179.87405 | 1.4 | 181.27405 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 120 | -76.87913 | 180.04715 | 1.4 | 181.44715 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 125 | -76.68212 | 180.21372 | 1.4 | 181.61372 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 130 | -76.5222 | 180.16415 | 1.4 | 181.56415 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 132 | -76.5 | 156.8 | 22.1 | 178.9 | ReflexEZS | New Age | 7/6/2016 | 5755 | ☐ | |
| 135 | -76.06961 | 180.27197 | 1.4 | 181.67197 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 140 | -75.69857 | 180.30758 | 1.4 | 181.70758 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 145 | -75.15982 | 180.63972 | 1.4 | 182.03972 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 150 | -74.76458 | 180.83175 | 1.4 | 182.23175 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 155 | -74.34967 | 180.85476 | 1.4 | 182.25476 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 156 | -74.3 | 159.2 | 22.1 | 181.3 | ReflexEZS | New Age | 7/6/2016 | 5724 | ☐ | |
| 160 | -74.23491 | 180.84838 | 1.4 | 182.24838 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 165 | -74.26443 | 180.87132 | 1.4 | 182.27132 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 170 | -74.32309 | 181.65342 | 1.4 | 183.05342 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 175 | -74.26761 | 181.75852 | 1.4 | 183.15852 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 180 | -74.08649 | 181.87496 | 1.4 | 183.27496 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 185 | -73.91151 | 182.08307 | 1.4 | 183.48307 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 186 | -74 | 161.2 | 22.1 | 183.3 | ReflexEZS | New Age | 7/7/2016 | 5730 | ☐ | |
| 190 | -73.73351 | 181.90075 | 1.4 | 183.30075 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 195 | -73.41382 | 181.26914 | 1.4 | 182.66914 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 200 | -73.31288 | 181.22313 | 1.4 | 182.62313 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 205 | -73.14526 | 181.09877 | 1.4 | 182.49877 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 210 | -72.96691 | 181.49223 | 1.4 | 182.89223 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 215 | -72.76981 | 181.54547 | 1.4 | 182.94547 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |

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| Depth (m) | Dip | Measured Azimuth | Correction Factor | Corrected Azimuth | Survey Type | Survey By | Survey Date | Mag Field | Accept Values? | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 216 | -73.1 | 157.2 | 22.1 | 179.3 | ReflexEZS | New Age | 7/7/2016 | 5628 | ☐ | |
| 220 | -72.51138 | 182.10215 | 1.4 | 183.50215 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 225 | -72.29997 | 182.23516 | 1.4 | 183.63516 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 230 | -72.05199 | 182.46121 | 1.4 | 183.86121 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 235 | -71.78889 | 182.67433 | 1.4 | 184.07433 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 240 | -71.7288 | 182.93498 | 1.4 | 184.33498 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 245 | -71.49579 | 182.84012 | 1.4 | 184.24012 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 250 | -71.16692 | 182.86322 | 1.4 | 184.26322 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 255 | -70.75365 | 182.83182 | 1.4 | 184.23182 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 260 | -70.31602 | 182.99453 | 1.4 | 184.39453 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 261 | -70.3 | 159.7 | 22.1 | 181.8 | ReflexEZS | New Age | 7/8/2016 | 5741 | ☐ | |
| 265 | -69.84633 | 183.71035 | 1.4 | 185.11035 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 270 | -69.5979 | 184.37966 | 1.4 | 185.77966 | Gyro | Steve Bultitude | 7/10/2016 | | ☑ | Motion quality = 100 |
| 285 | -69 | 164 | 22.1 | 186.1 | ReflexEZS | New Age | 7/8/2016 | 5702 | ☑ | |
| 323.7 | -69 | 167.1 | 22.1 | 189.2 | ReflexEZS | New Age | 7/9/2016 | 5740 | ☑ | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

**0.00 6.00 OVBN Overburden**

**6.00 27.77 RHYvl Lapilli tuff**

6 - 27.77: patchy bl in groundmass between lapilli to approximately 15.6m, sheeted qz veining 11- 14m

<<Min: 10.75 - 15.55 0.1% Min: Pyrrhotite>>

<<Min: 25 - 27 0.1% Min: Pyrrhotite>> partially oxidized @ 25m

<<Alt: 19 - 25 Weak-Moderate Calcite>>

<<Vein: 8.43 - 8.95 90% Quartz 80 deg. >> massive white qz veining

<<Vein: 11.2 - 13.5 30% Quartz 80 deg. >> massive qz sheeted veins 1cm - 10cm wide

<<Vein: 15.69 - 16.14 100% Quartz 70 deg. >> massive qz, lower contact in rubble core

<<Struc: 12 - 15 dominant foliation>>

<<Struc: 16 - 28.5 Weak-Moderate Fault>> numerous10cm long 0 broken and missing core with oxidation

<<Struc: 17.5 - 21 dominant foliation>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

**27.77 29.20 PEL Equigranular biotite + calcite +/- quartz rock**

27.77 - 29.2: Cbppo

<<Min: 27.77 - 29.2 1% Min: Pyrrhotite>>

<<Alt: 27.77 - 29.2 Strong Calcite>>

**29.20 37.35 RHYvl Lapilli tuff**

29.2 - 37.35: short interval around 33.10 - 33.4 could be RHYc; sheeted CA veinlets with BI selvage 3mm @ 33.5 - 37m. Gradational contact over 50cm with PEL below.
32.21- 32.48 = PEL (lpl)

<<Alt: 30.5 - 37.35 Weak-Moderate Calcite>> in CA-BI veinlets

<<Vein: 30.5 - 37 5% Carbonate-Biotite 65 deg. >> 3mm CA veinlets with 1-2mm BI selvage sheeted

<<Struc: 33.5 - 36 dominant foliation>>

**37.35 38.13 PEL Equigranular biotite + calcite +/- quartz rock**

<<Min: 37.35 - 38.13 0.5% Min: Pyrrhotite>>

<<Alt: 37.35 - 38.13 Moderate-Strong Calcite>>

**38.13 54.85 RHYvl Lapilli tuff**

38.13 - 54.85: BI in groundmass between lapilli in short intervals like 52 - 52.4m strong enough for PEL modifier. Minor BI with CA throughout indicating minor sedimentary input / mixing in thisRHYvl.

<<Alt: 38.13 - 54.85 Weak-Moderate Calcite>> in BI groundmass of RHYvl

<<Vein: 54.8 - 54.85 100% Quartz 80 deg. >> qz vein

<<Struc: 42 - 51 Weak Fault>> numerous 5cm broken core, lost core, rubble with oxidation

<<Struc: 53.5 - 54.5 Moderate Fault>> gouge and fault bx pieces, brittle

**54.85 55.96 PEL Equigranular biotite + calcite +/- quartz rock**

54.85 - 55.96: poor recovery

<<Alt: 54.85 - 55.96 Strong Calcite>>

<<Vein: 55.2 - 55.55 100% Calcium carbonate/Carbonate 80 deg. >> cb veins 10 and 5cm wide

<<Struc: 55 - 61 Weak-Moderate Fault>> brittle fracture, poor recovery missing core

**55.96 57.00 RHYvl Lapilli tuff**

<<Alt: 55.96 - 57 Weak Calcite>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

**57.00 57.57 RHYc Rhyolite coherant volcanics**

57 - 57.57: silicious, more massive domains, could be very narrow RHYi

**57.57 58.20 PEL Equigranular biotite + calcite +/- quartz rock**

<<Alt: 57.57 - 58.2 Strong Calcite>>

**58.20 61.15 RHYvl Lapilli tuff**

58.2 - 61.15: weak PEL input as FG BI

<<Min: 61 - 63 0.1% Min: Pyrrhotite>>

**61.15 66.67 PEL Equigranular biotite + calcite +/- quartz rock**

61.15 - 66.67: finer grained BI sections, some indication of felsic ash.

<<Min: 66 - 66.67 0.5% Min: Pyrite>>

<<Alt: 61.15 - 62.6 Strong Calcite>>

<<Alt: 62.6 - 66.67 Weak Calcite>>

<<Struc: 65.1 - 68.5 Weak-Moderate Fault>> as above

**66.67 67.00 PEL Equigranular biotite + calcite +/- quartz rock**

<<Min: 66.67 - 67 1% Min: Pyrrhotite>>

<<Alt: 66.67 - 67 Strong Calcite>>

**67.00 73.46 RHYvl Lapilli tuff**

67 - 73.46: sig BI domains and FG BI in RHYvl

<<Alt: 72.5 - 74.27 Moderate Calcite>>

<<Struc: 69.15 - 72.5 Strong Fault>> flt gouge signficant amount of lost core and oxidized flt material.

**73.46 73.68 RHYc Rhyolite coherant volcanics**

73.46 - 73.68: Very siliceous massive rhyolite domains 1cm scale with BI between. Very narrow pepperitic RHYi or RHYc

**73.68 74.27 PEL Equigranular biotite + calcite +/- quartz rock**

<<Min: 74 - 74.27 0.5% Min: Pyrite>>

<<Min: 74 - 74.27 0.1% Min: Pyrrhotite>>

<<Struc: 73.8 - 74 Moderate Fault>> flt gouge, missing core, rubble

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

**74.27 74.78 RHYc Rhyolite coherant volcanics**

74.27 - 74.78: Very siliceous massive rhyolite domains 1cm scale with BI between. Very narrow pepperitic RHYi or RHYc

<<Struc: 74.5 - 75.4 dominant foliation>>

**74.78 75.52 RHYvl Lapilli tuff**

74.78 - 75.52: sig BI domains and FG BI in RHYvl

<<Struc: 75.32 - 75.42 Weak-Moderate Fault>> crushed core, minor gouge

**75.52 76.01 RHYc Rhyolite coherant volcanics**

75.52 - 76.01: Very siliceous massive rhyolite domains 1cm scale with BI between. Very narrow pepperitic RHYi or RHYc

**76.01 78.33 PEL Equigranular biotite + calcite +/- quartz rock**

76.01 - 78.33: BI-r

<<Min: 77 - 78.33 0.5% Min: Pyrrhotite>>

<<Min: 78 - 78.33 0.5% Min: Pyrite>>

<<Alt: 76.01 - 78.33 Moderate Calcite>> and PAT

**78.33 78.62 RHYvl Lapilli tuff**

78.33 - 78.62: minor BI between some lapilli

<<Alt: 78.33 - 78.62 Weak-Moderate Calcite>> in BI groundmass

**78.62 80.51 PEL Equigranular biotite + calcite +/- quartz rock**

78.62 - 80.51: pure pelite, no felsic component

<<Min: 78.62 - 80.51 1% Min: Pyrrhotite>>

<<Alt: 78.62 - 80.51 Moderate-Strong Calcite>> and PER

**80.51 82.45 PEL Equigranular biotite + calcite +/- quartz rock**

80.51 - 82.45: pelite sediment with felsic ash component. development of recrystalized calcite and chlorite, BI deformed domains. Also Cbppo

<<Min: 80.51 - 82.9 0.5% Min: Pyrrhotite>>

<<Alt: 81.4 - 82.9 Moderate-Strong Calcite>>

<<Alt: 81.45 - 93 Weak Muscovite>> fine white muscovite

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Vein: 81.4 - 82 30% Carbonate-Chlorite>> deformed calcite -chl veins and bands

**82.45 93.00 RHYvl Lapilli tuff**

82.45 - 93: lapilli contet and size increase downhole. Weak BI and decreasing downhole.

<<Min: 82.9 - 93 1% Min: Pyrite>>

<<Min: 82.9 - 93 1% Min: Pyrrhotite>>

<<Alt: 82.9 - 93 Weak-Moderate Calcite>>

<<Struc: 82.45 - 86.3 Weak-Moderate Fault>> broken core, crushed zones

<<Struc: 89 - 90 Moderate-Strong dominant foliation>>

<<Struc: 91 - 91.65 Moderate-Strong dominant foliation>>

**93.00 94.16 PEL Equigranular biotite + calcite +/- quartz rock**

93 - 94.16: Minor development of folded bands and stringers (mm to cm) of recrystalized calcite with chlorite.

<<Alt: 93 - 94.16 Moderate-Strong Calcite>>

<<Vein: 93 - 94.16 10% Carbonate-Chlorite 80 deg. >> deformed calcite - chl veins and bands

**94.16 95.32 RHYvl Lapilli tuff**

94.16 - 95.32: Biotite folia, deformed calcite - chlorite clots, blebs and bands.

<<Alt: 94.16 - 95.32 Weak Muscovite>> fine white muscovite

<<Alt: 94.16 - 95.32 Weak-Moderate Calcite>>

**95.32 97.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

95.32 - 97.25: Dyke. 95.90-97.07: Abundant chlorite bands, clots & dissiminations, lesser biotite. Includes 5 cm felsic dyke

<<Min: 95.9 - 97.1 0.5% Min: Pyrrhotite>> with chlorite alteration

<<Alt: 95.32 - 95.9 Moderate-Strong Calcite>>

<<Alt: 95.9 - 97.06 Moderate Chlorite>>

<<Alt: 95.9 - 97.06 Trace Calcite>>

<<Alt: 95.9 - 97.06 Weak Biotite>>

<<Alt: 97.06 - 107.02 Weak-Moderate Calcite>>

<<Struc: 95.5 - 96 Moderate dominant foliation>>

**97.25 107.02 RHYvl Lapilli tuff**

<<Min: 97.25 - 107.02 0.5% Min: Pyrite>>

<<Min: 97.25 - 107.02 0.5% Min: Pyrrhotite>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Alt: 97.25 - 107.02 Weak-Moderate Muscovite>> minor sericite

<<Vein: 105.85 - 107 5% Quartz-Tourmaline 10 deg. >> low angle qtz-tou-cal veinlet

<<Struc: 105.5 - 106 Moderate dominant foliation>>

<<Struc: 105.8 - 106.1 Weak Vein>> qtz-tour veinlet

**107.02 112.10 PEL Equigranular biotite + calcite +/- quartz rock**

107.02 - 112.1: Deformed calcite-chlorite veins and bands. Minor chlorite alteration near center of unit.

<<Min: 107.02 - 112.1 1% Min: Pyrrhotite>>

<<Alt: 107.02 - 112.1 Moderate-Strong Calcite>>

<<Vein: 107.7 - 108.2 30% Carbonate-Chlorite>>

<<Struc: 108.2 - 112 Weak-Moderate Fault>> numerous zones broken and crushed core.

**112.10 122.29 RHYvl Lapilli tuff**

112.1 - 122.29: Gradational contact with overlying PEL, upper 65 cm contains PEL, decreasing downhole.

<<Min: 112.1 - 122.29 2% Min: Pyrite>>

<<Min: 112.1 - 122.29 1% Min: Pyrrhotite>>

<<Alt: 112.1 - 122.29 Weak Muscovite>>

<<Alt: 112.1 - 122.29 Trace Calcite>>

<<Struc: 116 - 119 Weak-Moderate dominant foliation>>

<<Struc: 122 - 122.35 Weak-Moderate dominant foliation>>

**122.29 123.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

122.29 - 123.25: Minor deformed calcite - chlorite bands and veins.

<<Min: 122.29 - 123.25 3% Min: Pyrrhotite>>

<<Alt: 122.29 - 123.25 Moderate-Strong Calcite>>

**123.25 126.17 RHYvl Lapilli tuff**

<<Min: 123.25 - 126.17 2% Min: Pyrrhotite>>

<<Alt: 123.25 - 126.17 Trace Calcite>> minor fracture filling

**126.17 126.57 PEL Equigranular biotite + calcite +/- quartz rock**

126.17 - 126.57: contains deformed calcite-chlorite bands.

<<Min: 126.17 - 126.57 3% Min: Pyrrhotite>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Alt: 126.17 - 126.57 Weak-Moderate Calcite>>

### 126.57 135.79 RHYvl Lapilli tuff

126.57 - 135.79: at upper and lower contacts alteration approaches BCQlpl (but no chlorite)

<<Min: 126.57 - 129.2 1% Min: Pyrrhotite>>

<<Min: 129.2 - 135.79 3% Min: Pyrite>>

<<Alt: 126.57 - 135.79 Weak-Moderate Muscovite>>

<<Alt: 126.57 - 135.79 Trace Calcite>> minor fracture filling and occasional diss.

<<Vein: 127.2 - 127.3 10% Quartz-Tourmaline 20 deg. >>

<<Struc: 131.75 - 132 Moderate dominant foliation>>

### 135.79 140.50 PEL Equigranular biotite + calcite +/- quartz rock

135.79 - 140.5: Ash rich sections. Unit is cut by qtz veins and deformed qtz-chlorite veins (no calicte-chlorite as in upper PEL units. Unit is locally bleached and silicified - qtz flooded (looks like and could also be in part ash rich sections. Bl-r at upper and lower contacts.

<<Min: 135.79 - 139.2 3% Min: Pyrrhotite>>

<<Min: 139.2 - 139.7 3% Min: Pyrite>>

<<Min: 139.7 - 142.62 1% Min: Pyrite>>

<<Alt: 135.79 - 136.25 Moderate-Strong Calcite>>

<<Alt: 136.25 - 139.8 Trace Calcite>> calcite veining and filling

<<Alt: 136.9 - 140.5 Weak Muscovite>> associated with bleaching

<<Alt: 136.92 - 139 Moderate-Strong Silicification>>

<<Alt: 137.9 - 151.84 Weak Chlorite>> also as diss, thin mm bands, wisps

<<Alt: 139.8 - 140.5 Moderate Calcite>>

<<Vein: 136.28 - 136.66 100% Quartz>>

<<Vein: 136.4 - 139 30% Quarzt-Chlorite-Carbonate>> deformed and brecciated qtz vein with minor calcite and chlorite

### 140.50 142.62 RHYv Rhyolite volcaniclastic

<<Alt: 140.5 - 150 Weak-Moderate Calcite>> as blebs, fracture filling, veinlets and diss.

<<Alt: 140.5 - 151.84 Weak Muscovite>> associated with bleached PEL, fine white muscovite on RHY folia and rare sericite on fractures and folia.

<<Vein: 141.5 - 148.55 5% Quartz-Chlorite>> Deformed qtz veinlets approximately parallel to foliation, locally as qtz floodig with irregular margins.

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

**142.62 149.95 RHYvx Quartz and/or feldspar crystal tuff**

142.62 - 149.95: Upper Qtz eye marker unit. Minor PEL sections (BI-r). Bands of qtz-calcite-chlorite alteration, commonly deformed. Likely bleaching of PEL along folia.

<<Min: 142.62 - 144.6 3% Min: Pyrite>>

<<Min: 143.4 - 143.9 0.1% Min: Sphalerite>>

<<Min: 143.4 - 143.9 0.5% Min: Chalcopyrite>>

<<Min: 144.6 - 145 0.5% Min: Pyrrhotite>>

<<Min: 145 - 151.55 0.5% Min: Pyrite>>

<<Vein: 148 - 148.5 40% Calcite 80 deg. >> foliform brx cal veining

<<Struc: 144 - 144.4 Moderate dominant foliation>>

<<Struc: 145.15 - 145.25 Weak-Moderate Fault>>

**149.95 150.38 PEL Equigranular biotite + calcite +/- quartz rock**

<<Alt: 150 - 150.4 Moderate-Strong Calcite>>

<<Struc: 150 - 150.9 Moderate dominant foliation>>

**150.38 151.84 RHYvx Quartz and/or feldspar crystal tuff**

150.38 - 151.84: Upper Qtz eye marker unit. Minor PEL sections (BI-r), locally bleached.

<<Min: 151.55 - 153.26 3% Min: Pyrrhotite>>

<<Alt: 150.4 - 151.5 Weak Calcite>>

<<Alt: 151.5 - 151.84 Weak-Moderate Calcite>> thin bands - folia.

**151.84 153.26 PEL Equigranular biotite + calcite +/- quartz rock**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 151.84 | 153.26 | 1.42 | D00005529 | -0.005 | 1.2 | 0.05 | 0.06 | 0.21 |

151.84 - 153.26: Mixed PEL - RHYva unit, possible BI destruction.

<<Alt: 151.84 - 153 Weak-Moderate Chlorite>>

<<Alt: 151.84 - 153.26 Moderate Calcite>>

<<Alt: 153 - 155.13 Moderate-Strong Chlorite>>

<<Struc: 152 - 153 Moderate-Strong dominant foliation>>

| From (m) | To (m) | Rocktype & Description |
|---|---|---|
| **153.26** | **159.70** | **OJ** **Heavilly disseminated sulphides and/or stringer style mineralization in proximal altered rock** |

153.26 - 159.7: Weak to strong OJ (minor to semi massive chlorite) with minor sections of PEL and RHYva, variable amounts of diss and minor bands of py-po-cp-sp-gn.158.58-158.84m: semi-massive po with blebs cpy (almost OF).159.06-159.40m: mostly RHYva.

<<Min: 153.26 - 155.13 5% Min: Pyrrhotite>>
<<Min: 153.26 - 155.13 5% Min: Pyrite>>
<<Min: 153.26 - 155.13 3% Min: Sphalerite>>
<<Min: 153.26 - 155.13 0.5% Min: Galena>>
<<Min: 155.13 - 156.63 3% Min: Pyrrhotite>> diss
<<Min: 155.13 - 156.63 3% Min: Pyrite>> diss
<<Min: 156.63 - 158.41 5% Min: Pyrrhotite>>
<<Min: 156.63 - 158.41 1% Min: Galena>>
<<Min: 156.63 - 158.41 3% Min: Sphalerite>>
<<Min: 156.63 - 158.41 3% Min: Chalcopyrite>>
<<Min: 158.41 - 158.84 3% Min: Chalcopyrite>>
<<Min: 158.41 - 158.84 15% Min: Pyrrhotite>>
<<Min: 158.41 - 158.84 15% Min: Sphalerite>>
<<Min: 158.84 - 159.7 5% Min: Pyrite>>
<<Min: 158.84 - 159.7 1% Min: Chalcopyrite>>
<<Min: 158.84 - 159.7 1% Min: Pyrrhotite>>
<<Alt: 153.26 - 159.7 Moderate Biotite>>
<<Alt: 153.4 - 154 Moderate Cordierite>>
<<Alt: 155.13 - 156.63 Moderate Chlorite>>
<<Alt: 156 - 160.6 Trace Silicification>>
<<Alt: 156.63 - 158.58 Strong Chlorite>>
<<Alt: 156.7 - 158.84 Moderate Cordierite>> diss, well developed 158.58-158.84m.
<<Alt: 158.58 - 158.84 Weak Garnet>> up to .5cm size, light brn
<<Alt: 158.58 - 159.7 Moderate-Strong Chlorite>>
<<Alt: 159.1 - 160 Weak Calcite>>
<<Vein: 158.41 - 158.58 100% Quartz-Chlorite-Sulphide 75 deg. >> Chlorite margins, qtz-sulfide center
<<Struc: 155.3 - 156 Moderate dominant foliation>>

| From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|
| 153.26 | 155.13 | 1.87 | D00005531 | 0.03 | 9.2 | 0.06 | 1.04 | 1.91 |
| 155.13 | 156.63 | 1.50 | D00005532 | -0.005 | 0.5 | -0.01 | 0.06 | 0.06 |
| 156.63 | 158.41 | 1.78 | D00005533 | 0.088 | 12.1 | 0.15 | 1.63 | 3.13 |
| 158.41 | 158.85 | 0.44 | D00005534 | 0.137 | 23.7 | 0.3 | 1.01 | 13.8 |
| 158.85 | 159.70 | 0.85 | D00005535 | 0.206 | 4.8 | 0.38 | 0.02 | 1.56 |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | <<Struc: 158 - 165.5 Weak Fault>> minor zones of broken - fractured core, locally cemented by calcite. | | | | | | | | | |
| | | <<Struc: 158.58 - 158.84 Strong Contact>> average of sulfide band contacts | | | | | | | | | |
| **159.70** | **164.30** | **RHYva Coarse grained to ash tuff** | 159.70 | 161.70 | 2.00 | D00005536 | 0.025 | 4 | 0.03 | 0.14 | 0.4 |
| | | 159.7 - 164.3: Minor PEL as thin BI bands, might be more but BI destroyed. Best section 160.00-160.30. Diss py increasing over lower 20 cm. | | | | | | | | | |
| | | <<Min: 159.7 - 163.5 3% Min: Pyrite>> | 161.70 | 163.30 | 1.60 | D00005537 | 0.092 | 11.5 | 0.03 | 0.3 | 0.88 |
| | | <<Min: 163.5 - 164.3 5% Min: Pyrite>> | 163.30 | 164.30 | 1.00 | D00005538 | 0.295 | 37.1 | 0.05 | 0.67 | 1.04 |
| | | <<Alt: 159.7 - 161.7 Weak Chlorite>> | | | | | | | | | |
| | | <<Alt: 160 - 162.15 Moderate Calcite>> | | | | | | | | | |
| | | <<Alt: 160.6 - 165.85 Weak-Moderate Silicification>> | | | | | | | | | |
| | | <<Struc: 164.29 - 164.3 Strong Contact>> upper sulfide band contact | | | | | | | | | |
| **164.30** | **164.74** | **OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite** | 164.30 | 164.74 | 0.44 | D00005539 | 3 | 298 | 0.28 | 8.03 | 15 |
| | | 164.3 - 164.74: Approx 20% buckshot PY, 30+% semi massive SP. | | | | | | | | | |
| | | <<Min: 164.3 - 164.74 25% Min: Sphalerite>> semi massive po-sp | | | | | | | | | |
| | | <<Min: 164.3 - 164.74 15% Min: Pyrite>> | | | | | | | | | |
| | | <<Min: 164.3 - 164.74 10% Min: Pyrrhotite>> semi massive po-sp | | | | | | | | | |
| | | <<Min: 164.3 - 164.74 5% Min: Galena>> | | | | | | | | | |
| | | <<Alt: 164.6 - 165.87 Trace Calcite>> | | | | | | | | | |
| **164.74** | **165.87** | **RHYva Coarse grained to ash tuff** | 164.74 | 165.87 | 1.13 | D00005541 | 0.012 | 1.3 | 0.02 | -0.01 | 0.02 |
| | | <<Min: 164.74 - 165.87 0.5% Min: Pyrite>> | | | | | | | | | |
| **165.87** | **169.53** | **PEL Equigranular biotite + calcite +/- quartz rock** | 165.87 | 167.40 | 1.53 | D00005542 | 0.086 | 3.9 | 0.02 | 0.04 | 0.12 |
| | | 165.87 - 169.53: Middle of unit ash rich, more BI-r. | | | | | | | | | |
| | | <<Min: 165.87 - 169.53 3% Min: Pyrrhotite>> | 167.91 | 169.41 | 1.50 | D00005543 | 0.09 | 1.4 | 0.01 | -0.01 | 0.02 |
| | | <<Alt: 165.87 - 169.53 Weak-Moderate Calcite>> | | | | | | | | | |
| | | <<Alt: 166.4 - 172.51 Weak-Moderate Silicification>> | | | | | | | | | |
| | | <<Vein: 166.1 - 166.36 20% Quartz-Tourmaline 30 deg. >> | | | | | | | | | |
| | | <<Vein: 167.19 - 168.34 75% Quartz 80 deg. >> | | | | | | | | | |
| | | <<Vein: 169.3 - 169.5 40% Quartz 15 deg. >> low angle | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Struc: 167.5 - 185.3 Weak Fault>> numerou zone of broken - cruhed core, clay-calcite on fractue, several zones of 'wash' noted by drillers (no core recovery).

**169.53 172.51 RHYva Coarse grained to ash tuff**

<<Min: 169.53 - 172.51 3% Min: Pyrite>>

<<Alt: 169.53 - 172.4 Weak Muscovite>>

<<Alt: 169.53 - 172.51 Trace Calcite>>

<<Vein: 170.75 - 172.5 10% Quartz 80 deg. >> veins <10cm wide

**172.51 173.68 PEL Equigranular biotite + calcite +/- quartz rock**

<<Min: 172.51 - 173.68 3% Min: Pyrrhotite>>

<<Alt: 172.51 - 173.68 Moderate-Strong Calcite>>

**173.68 174.52 RHYvx Quartz and/or feldspar crystal tuff**

<<Min: 173.68 - 185.3 3% Min: Pyrite>> commonly diss in discrete bands

<<Min: 173.68 - 186 1% Min: Pyrrhotite>>

<<Alt: 173.68 - 181.48 Moderate Silicification>>

<<Alt: 173.68 - 181.48 Trace Calcite>>

<<Alt: 173.8 - 199.33 Weak Muscovite>> fine muscovite, MU replacing BI in PEL units.

**174.52 175.88 No Core No Core**

**175.88 181.47 RHYvx Quartz and/or feldspar crystal tuff**

<<Vein: 176.96 - 177.86 70% Quartz 80 deg. >> rare blebs SP

<<Vein: 179.51 - 179.75 90% Quartz 80 deg. >>

<<Struc: 178 - 179.7 Moderate-Strong dominant foliation>>

**181.47 182.72 No Core No Core**

<<Alt: 181.48 - 183.4 Moderate Calcite>>

**182.72 183.80 RHYvx Quartz and/or feldspar crystal tuff**

<<Alt: 183.4 - 186.1 Trace Calcite>>

**183.80 185.30 No Core No Core**

| From (m) | To (m) | Rocktype & Description |
|---|---|---|
| **185.30** | **199.33** | **RHYva Coarse grained to ash tuff** |

185.3 - 199.33: minor sections and thin bands of PEL (ie. 187.98-188.46 m largest but not strong BI). Wisps and dis of PY PO starting at 188.65 along with silicification which grades into intermittant almost looking calc-silicate alteration plus local bands of chl-biotite alteration +/- py-po-sp-cp.

<<Min: 185.3 - 187 5% Min: Pyrite>>

<<Min: 186 - 186.9 5% Min: Pyrrhotite>>

<<Min: 187 - 187.78 3% Min: Pyrite>>

<<Min: 187.78 - 188.66 1% Min: Pyrite>>

<<Min: 187.88 - 188.75 3% Min: Pyrrhotite>>

<<Min: 188.66 - 193.6 5% Min: Pyrite>>

<<Min: 188.75 - 193.6 3% Min: Pyrrhotite>>

<<Min: 193.6 - 196.7 3% Min: Pyrrhotite>>

<<Min: 193.6 - 199.33 1% Min: Pyrite>>

<<Min: 196.7 - 198.5 3% Min: Pyrrhotite>>

<<Min: 196.97 - 198.55 3% Min: Sphalerite>> SP concentrated in 3 chlorite pyrite bands about 10 cm wide.

<<Min: 199.3 - 201.7 5% Min: Pyrrhotite>>

<<Alt: 185.3 - 220.34 Moderate Silicification>> SI associated with RHY units, sulfide concentrations and forms what look like bands and patches of weak calc silicate alteration. Thicker PEL units are are rarely silicified.

<<Alt: 186 - 186.94 Trace Chlorite>> associated with sulfides, bleaching and SI.

<<Alt: 186.1 - 186.8 Weak-Moderate Calcite>> PEL rich zone

<<Alt: 186.8 - 187.98 Trace Calcite>>

<<Alt: 187.98 - 188.46 Moderate Calcite>>

<<Alt: 188.46 - 197.1 Trace Calcite>>

<<Alt: 193.2 - 198.2 Weak Chlorite>>

<<Alt: 193.25 - 209.7 Weak Biotite>>

<<Alt: 197.1 - 203.8 Weak Calcite>> CA associated with alteration and mineraization

<<Alt: 198.2 - 204 Weak-Moderate Chlorite>> patchy blebs-clots, diss and rare bands

<<Vein: 191.7 - 191.8 25% Quartz-Pyrrhotite 20 deg. >> in ground core

<<Vein: 195.2 - 197.1 35% Quartz 70 deg. >> up to 25cm wide

<<Struc: 189 - 190 Moderate dominant foliation>>

<<Struc: 190.2 - 190.3 Weak-Moderate Fault>>

<<Struc: 193.9 - 196.7 Weak Fault>> zones of broken core, minor gouge, parallel to foliation

| From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|
| 197.00 | 198.50 | 1.50 | D00005544 | 0.015 | 14.4 | 0.01 | 0.39 | 2.2 |
| 198.50 | 199.33 | 0.83 | D00005545 | -0.005 | -0.3 | -0.01 | -0.01 | 0.02 |

| From (m) | To (m) | | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **199.33** | **201.70** | **OJ** | **Heavilly disseminated sulphides and/or stringer style mineralization in proximal altered rock** | 199.33 | 200.50 | 1.17 | D00005546 | 0.012 | 7.2 | 0.03 | 0.28 | 1.41 |
| 199.33 - 201.7: 199.33-200.20: Weak (chlorite -sulfide) OJ, 200.20-201.70: very weak chlorite - sulfides, locally siliceous. Bippo | | | | | | | | | | | | |
| <<Min: 199.33 - 201.7 3% Min: Sphalerite>> | | | | 200.50 | 201.70 | 1.20 | D00005547 | 0.012 | 7.7 | 0.06 | 0.65 | 2.83 |
| <<Min: 199.33 - 201.7 3% Min: Pyrite>> | | | | | | | | | | | | |
| <<Min: 199.33 - 201.7 0.1% Min: Chalcopyrite>> | | | | | | | | | | | | |
| <<Struc: 201.3 - 201.6 Moderate dominant foliation>> | | | | | | | | | | | | |
| **201.70** | **204.00** | **RHYva** | **Coarse grained to ash tuff** | 201.70 | 204.00 | 2.30 | D00005548 | 0.01 | 8.5 | 0.01 | 0.19 | 0.79 |
| <<Min: 201.7 - 204 1% Min: Pyrite>> PAT diss | | | | | | | | | | | | |
| <<Min: 201.7 - 204 1% Min: Pyrrhotite>> | | | | | | | | | | | | |
| <<Min: 203.48 - 204 1% Min: Sphalerite>> | | | | | | | | | | | | |
| <<Alt: 203.8 - 210.34 Moderate Calcite>> CA associated with alteration and weak mineralization | | | | | | | | | | | | |
| <<Struc: 201.7 - 204.4 Moderate Fault>> 2 zone of gouge 10-20 cm and smaller plus intervening zone of broken core. | | | | | | | | | | | | |
| **204.00** | **206.14** | **PEL** | **Equigranular biotite + calcite +/- quartz rock** | 204.00 | 206.14 | 2.14 | D00005549 | 0.007 | 2.7 | -0.01 | 0.09 | 0.19 |
| 204 - 206.14: bleached - biotite destroyed bands, grey bands of silicification - almost calc silicate. | | | | | | | | | | | | |
| <<Min: 204 - 206.14 3% Min: Pyrrhotite>> | | | | | | | | | | | | |
| <<Min: 206.1 - 207.1 3% Min: Sphalerite>> | | | | | | | | | | | | |
| <<Min: 206.1 - 207.1 0.5% Min: Chalcopyrite>> | | | | | | | | | | | | |
| <<Min: 206.1 - 207.21 3% Min: Pyrite>> | | | | | | | | | | | | |
| <<Min: 206.1 - 207.21 3% Min: Pyrrhotite>> | | | | | | | | | | | | |
| **206.14** | **207.21** | **OJ** | **Heavilly disseminated sulphides and/or stringer style mineralization in proximal altered rock** | 206.14 | 207.21 | 1.07 | D00005551 | 0.007 | 5.8 | 0.02 | 0.62 | 1.26 |
| <<Min: 207.1 - 210.34 0.5% Min: Sphalerite>> PAT diss | | | | | | | | | | | | |
| <<Min: 207.1 - 210.34 1% Min: Pyrite>> PAT diss | | | | | | | | | | | | |
| <<Min: 207.1 - 210.34 3% Min: Pyrrhotite>> PAT diss | | | | | | | | | | | | |
| <<Min: 207.1 - 210.34 0.1% Min: Chalcopyrite>> PAT diss | | | | | | | | | | | | |
| <<Alt: 206.14 - 207.21 Moderate Chlorite>> | | | | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | <<Struc: 206.5 - 207.8 Weak Fault>> | | | | | | | | | |
| **207.21** | **210.34** | **PEL** **Equigranular biotite + calcite +/- quartz rock** | 207.21 | 208.71 | 1.50 | D00005552 | -0.005 | 4.9 | 0.02 | 0.4 | 0.94 |
| | | 207.21 - 210.34: Very similar to above OJ but chlorite-sulfides overall weaker. Lowermost 0.5m is PEL, next to no alteration. | | | | | | | | | |
| | | <<Alt: 207.21 - 209.7 Weak Chlorite>> | 208.71 | 210.21 | 1.50 | D00005553 | -0.005 | 3.4 | 0.02 | 0.26 | 1.02 |
| | | <<Struc: 208 - 209.1 Moderate-Strong dominant foliation>> | | | | | | | | | |
| **210.34** | **211.44** | **RHYc** **Rhyolite coherent volcanics** | | | | | | | | | |
| | | 210.34 - 211.44: block of RHYc in PEL | | | | | | | | | |
| | | <<Min: 210.34 - 211.44 1% Min: Pyrrhotite>> PAT diss | | | | | | | | | |
| | | <<Min: 210.34 - 212.3 1% Min: Pyrite>> PAT diss | | | | | | | | | |
| | | <<Min: 210.34 - 212.3 1% Min: Pyrrhotite>> PAT diss | | | | | | | | | |
| | | <<Min: 210.34 - 212.3 0.1% Min: Chalcopyrite>> PAT diss | | | | | | | | | |
| | | <<Alt: 210.34 - 211.44 Weak Calcite>> | | | | | | | | | |
| | | <<Vein: 211.4 - 220.15 5% Quartz 70 deg. >> thin foliaform veinlets, locally bleached envelopes | | | | | | | | | |
| **211.44** | **212.31** | **PEL** **Equigranular biotite + calcite +/- quartz rock** | | | | | | | | | |
| | | 211.44 - 212.31: center portion of unit is ash rich. | | | | | | | | | |
| | | <<Alt: 211.44 - 212.3 Moderate-Strong Calcite>> | | | | | | | | | |
| | | <<Struc: 212.3 - 212.37 Weak Fault>> | | | | | | | | | |
| **212.31** | **214.90** | **RHYc** **Rhyolite coherent volcanics** | | | | | | | | | |
| | | 212.31 - 214.9: Mostly coherent but sections with ash and lapilli. | | | | | | | | | |
| | | <<Min: 213.3 - 222.9 1% Min: Pyrrhotite>> and as wisps | | | | | | | | | |
| | | <<Alt: 213.3 - 214.9 Weak Calcite>> | | | | | | | | | |
| | | <<Struc: 214.6 - 216 Moderate dominant foliation>> | | | | | | | | | |
| **214.90** | **218.21** | **PEL** **Equigranular biotite + calcite +/- quartz rock** | | | | | | | | | |
| | | 214.9 - 218.21: Bl-r, ash increaeses down section. | | | | | | | | | |
| | | <<Alt: 214.9 - 218.21 Moderate Calcite>> | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **218.21** | **220.40** | **RHYvl Lapilli tuff**<br>218.21 - 220.4: minor PEL bands and biotite folia, Silicic bands<br><<Alt: 218.21 - 220.4 Trace Calcite>><br><<Struc: 219.5 - 220.6 Moderate dominant foliation>> | | | | | | | | | |
| **220.40** | **222.90** | **PEL Equigranular biotite + calcite +/- quartz rock**<br>220.4 - 222.9: BI-r<br><<Alt: 220.4 - 224.1 Moderate Calcite>><br><<Struc: 220.6 - 222.9 Moderate dominant foliation>> defined by foliaform calcite veinlets in PEL<br><<Struc: 220.7 - 223.05 Weak Fault>> | | | | | | | | | |
| **222.90** | **225.68** | **RHYva Coarse grained to ash tuff**<br>222.9 - 225.68: Bleached by veining and SIL, BI destroyed<br><<Min: 222.9 - 224.2 3% Min: Pyrrhotite>><br><<Min: 224.2 - 226 1% Min: Pyrrhotite>><br><<Alt: 222.9 - 240.41 Weak Muscovite>> fine white mica<br><<Alt: 224.1 - 225.68 Weak-Moderate Calcite>><br><<Vein: 224.75 - 225.17 20% Quartz-Albite 25 deg. >> low angle, irregular Qtz - feld vein - not necessarily albite | 229.45 | 230.95 | 1.50 | D00005554 | 0.007 | 3.6 | 0.03 | 0.13 | 1.03 |
| **225.68** | **232.48** | **RHYcf Feldspar & feldspar quartz porphyry**<br>225.68 - 232.48: 225.68 - 227.44: Gradational contact with PEL and ash decreasing downhole, Feldspar - qtz phenos increasing downhole, also several foliaform biotite - pyrite strain zones 10-15cm, or they could be PEL - ash bands.<br><<Min: 226 - 232.25 0.5% Min: Sphalerite>> Diss py-sp+/-gl+/-po+/-cpy bands and wisps commonly 1-3cm wide, spaced 0.25-1.0m apart.<br><<Min: 226 - 232.25 3% Min: Pyrite>> Diss py-sp+/-gl+/-po+/-cpy bands and wisps commonly 1-3cm wide, spaced 0.25-1.0m apart.<br><<Min: 226 - 232.25 0.5% Min: Galena>> Diss py-sp+/-gl+/-po+/-cpy bands and wisps commonly 1-3cm wide, spaced 0.25-1.0m apart.<br><<Min: 226 - 232.25 0.1% Min: Chalcopyrite>> Diss py-sp+/-gl+/-po+/-cpy bands and wisps commonly 1-3cm wide, spaced 0.25-1.0m apart.<br><<Alt: 225.68 - 239.7 Trace Calcite>><br><<Alt: 228.9 - 240.21 Weak Silicification>> SI with bands of diss sulfides<br><<Struc: 229.7 - 231 Weak-Moderate dominant foliation>> sulfide band and foliation | 230.95 | 232.48 | 1.53 | D00005555 | -0.005 | 0.8 | 0.02 | 0.04 | 0.33 |

| From (m) | To (m) | Rocktype & Description |
|---|---|---|
| **232.48** | **238.47** | **RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** |
| 232.48 - 238.47: gradational lower contact. Marked by decrease of silica bands - bleb and increase in ash. | | |
| <<Min: 234.35 - 236.2 3% Min: Pyrrhotite>> | | |
| <<Min: 236.2 - 240.21 5% Min: Pyrite>> | | |
| <<Struc: 233.5 - 233.8 Weak-Moderate Fault>> muscovite altered weakly brecciated flt zone | | |
| <<Struc: 235.52 - 236.2 Weak-Moderate Fault>> muscovite altered weakly brecciated flt zone | | |
| <<Struc: 237 - 237.7 Weak-Moderate dominant foliation>> | | |
| **238.47** | **240.21** | **RHYva** **Coarse grained to ash tuff** |
| 238.47 - 240.21: lower contact is gradational over about 30 cm. 238.90-239.23m: Chl-Bi alt with sulfides. | | |
| <<Min: 238.9 - 240.21 1% Min: Sphalerite>> with weak chl - biotite alteration | | |
| <<Alt: 238.9 - 240.21 Weak Chlorite>> with sulfides | | |
| <<Alt: 238.9 - 240.21 Weak-Moderate Biotite>> with increase in sulfides | | |
| <<Alt: 239.7 - 240.83 Moderate-Strong Calcite>> | | |
| <<Vein: 238.47 - 238.51 100% Quartz>> | | |
| <<Struc: 238.73 - 238.9 Weak-Moderate dominant foliation>> | | |
| <<Struc: 238.89 - 238.9 Moderate-Strong Contact>> alteration contact parallel to 0.5cm gouge zone, alt on downhole side. | | |
| **240.21** | **240.83** | **PEL** **Equigranular biotite + calcite +/- quartz rock** |
| <<Min: 240.21 - 241.2 0.5% Min: Pyrite>> | | |
| **240.83** | **250.22** | **RHYvl** **Lapilli tuff** |
| <<Min: 241.2 - 245 3% Min: Sphalerite>> dis SP commonly concentrated in thin diffuse bands witg py, rare cp and gl. | | |
| <<Min: 241.2 - 245 5% Min: Pyrite>> | | |
| <<Min: 245 - 246.19 1% Min: Pyrite>> | | |
| <<Min: 246.19 - 249.93 3% Min: Sphalerite>> dis SP commonly concentrated in thin diffuse bands witg py, rare cp and gl. | | |
| <<Min: 246.19 - 249.93 10% Min: Pyrite>> | | |
| <<Min: 246.19 - 249.93 0.5% Min: Galena>> | | |
| <<Min: 246.19 - 249.93 0.5% Min: Chalcopyrite>> | | |
| <<Min: 249.93 - 253.2 3% Min: Pyrite>> | | |
| <<Min: 249.93 - 265.25 0.1% Min: Sphalerite>> | | |
| <<Alt: 240.83 - 250.2 Weak Biotite>> BI with increase in sulfides | | |

| From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|
| 237.25 | 238.75 | 1.50 | D00005556 | -0.005 | 1.5 | 0.04 | 0.09 | 0.3 |
| 238.75 | 240.25 | 1.50 | D00005557 | 0.019 | 2.5 | 0.18 | 0.03 | 1.62 |
| 241.20 | 242.70 | 1.50 | D00005558 | 0.008 | 1.9 | 0.08 | 0.04 | 0.79 |
| 242.70 | 244.20 | 1.50 | D00005559 | 0.007 | 1.9 | 0.09 | 0.06 | 0.68 |
| 244.20 | 245.70 | 1.50 | D00005561 | 0.007 | 2.1 | 0.07 | 0.06 | 0.97 |
| 245.70 | 247.20 | 1.50 | D00005562 | 0.011 | 2.6 | 0.1 | 0.09 | 0.75 |
| 247.20 | 248.70 | 1.50 | D00005563 | 0.013 | 2.3 | 0.22 | 0.08 | 2.95 |
| 248.70 | 250.22 | 1.52 | D00005564 | 0.008 | 3.2 | 0.02 | 0.56 | 0.52 |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Alt: 240.83 - 253.2 Moderate Muscovite>> fine white mica, bleached, only remnant BI.

<<Alt: 240.83 - 282.8 Weak Calcite>> CA in fractures, diss in PEL bands and with clots - bands of sulfides.

<<Alt: 243 - 250.22 Weak-Moderate Silicification>>

<<Alt: 250.2 - 267.45 Trace Biotite>> BI with minor diss sulfide bands

<<Struc: 241 - 241.3 Weak Fault>>

<<Struc: 244 - 245 Moderate dominant foliation>> foliation an sulfide bands

<<Struc: 244.9 - 244.95 Weak-Moderate Fault>> gouge

<<Struc: 246.03 - 246.2 Weak-Moderate Fault>> minor gouge

<<Struc: 249.36 - 249.42 Weak-Moderate Fault>> gouge

<<Struc: 249.75 - 249.8 Weak-Moderate Fault>> gouge

## 250.22 255.88 RHYva Coarse grained to ash tuff

250.22 - 255.88: minor PEL 253.4-254.7, more siliceou with silic bands 254.7-255.88.

<<Min: 253.2 - 254 3% Min: Pyrrhotite>>

<<Min: 254 - 257.2 1% Min: Pyrite>>

<<Min: 254 - 269.25 1% Min: Pyrrhotite>> scattered patches of diss PO in thin mm qtz-sulfide bands and diss in thin sections with remnant brown BI.

<<Alt: 253.2 - 254 Weak Muscovite>>

<<Alt: 254 - 282.92 Weak-Moderate Muscovite>>

<<Struc: 252.3 - 252.9 Weak-Moderate Fault>> broken core

<<Struc: 254.05 - 254.15 Weak-Moderate Fault>> minor gouge

## 255.88 258.68 RHYvl Lapilli tuff

255.88 - 258.68: gradational contact, silic bands

<<Min: 257.2 - 263.5 3% Min: Pyrite>>

<<Vein: 256.9 - 257.1 90% Quartz>> qtz vein and qtz flooding

<<Struc: 256.65 - 256.68 Weak Fault>> gouge

<<Struc: 257.23 - 257.27 Weak-Moderate Fault>> gouge

## 258.68 265.25 RHYva Coarse grained to ash tuff

258.68 - 265.25: minor PEL bands, local lpl. Hetergeneous unit!

<<Min: 263.5 - 265.25 10% Min: Pyrite>>

<<Struc: 258.94 - 259.22 Weak Fault>> minor gouge

<<Struc: 260.25 - 260.7 Moderate-Strong dominant foliation>>

<<Struc: 261.35 - 263 Weak Fault>> broken core, calcite healed fractures

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Struc: 263 - 263.9 Moderate-Strong dominant foliation>>

**265.25 266.47 RHYvl Lapilli tuff**

265.25 - 266.47: silic bands

<<Min: 265.25 - 267.5 3% Min: Pyrite>>

<<Struc: 266.36 - 266.47 Moderate Fault>> gouge - broken core

**266.47 267.00 RHYva Coarse grained to ash tuff**

266.47 - 267: beached? Bi partially destroyed.

<<Struc: 266.47 - 267 Moderate dominant foliation>>

**267.00 269.70 RHYvl Lapilli tuff**

<<Min: 267.5 - 272.9 1% Min: Pyrite>>

<<Struc: 269.57 - 269.7 Moderate Fault>> gouge

**269.70 273.51 RHYvl Lapilli tuff**

269.7 - 273.51: minor silic bands

<<Min: 272.9 - 281.1 0.5% Min: Pyrite>>

<<Struc: 270 - 270.1 Weak-Moderate Fault>> gouge

<<Struc: 273.5 - 281.1 Strong Fault>> gouge, missing core, crushed and broken core

**273.51 281.10 RHY undifferentiated rhyolite**

273.51 - 281.1: Faulted and sheared RHY with 1/3 missing core.

**281.10 282.91 RHYvl Lapilli tuff**

281.1 - 282.91: bleached, siliceous

<<Min: 281.1 - 282.91 0.1% Min: Pyrite>>

<<Alt: 282.8 - 284 Weak-Moderate Calcite>>

<<Alt: 282.81 - 284.31 Moderate-Strong Chlorite>> possibly a chlorite altered PEL-ash band

<<Struc: 282.65 - 282.75 Weak Fault>> broken core

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **282.91 284.31 PEL Equigranular biotite + calcite +/- quartz rock** | | | 282.91 | 284.31 | 1.40 | D00005565 | -0.005 | -0.3 | -0.01 | -0.01 | 0.04 |

282.91 - 284.31: intense chlorite alteration, remnant bands and wisps of light brown biotite. More like skarn type alteration.

<<Min: 282.91 - 284.31 1% Min: Pyrrhotite>>

<<Alt: 284 - 291.9 Trace Calcite>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Struc: 283.5 - 284 Moderate-Strong dominant foliation>>

<<Struc: 284.3 - 284.31 Strong Contact>>

**284.31 287.67 RHYvl Lapilli tuff**

284.31 - 287.67: blebby, dismembered silic bands, possible qtz eye's.

<<Min: 284.31 - 291.9 0.1% Min: Pyrite>>

<<Min: 284.31 - 291.9 0.5% Min: Pyrrhotite>>

<<Alt: 284.31 - 287.67 Weak-Moderate Muscovite>>

<<Vein: 287.58 - 287.82 70% Quartz-Carbonate 75 deg. >> qtz 80% - Calcite 20% veining at contact

**287.67 288.30 PEL Equigranular biotite + calcite +/- quartz rock**

287.67 - 288.3: intense chlorite alteration, remnant bands and wisps of light brown biotite. More like a skarn type alteration.

<<Alt: 287.67 - 288.3 Moderate Chlorite>> possibly a chlorite altered PEL-ash band

<<Struc: 287.67 - 287.68 Strong Contact>> parallel to DFOL

**288.30 291.90 RHYvx Quartz and/or feldspar crystal tuff**

288.3 - 291.9: increase in fine white muscovite

<<Alt: 288.3 - 291.9 Moderate Muscovite>> abundant fine white mica

<<Struc: 288.3 - 293.75 Weak-Moderate Fault>> broken core, minor crushed zones, missing core.

**291.90 296.57 MDSc Carbonaceous dominant mudstone**

291.9 - 296.57: MDSt near contacts, stronger MDSc center. 295.44-295.59m: CHTc.

<<Min: 291.9 - 296.7 0.5% Min: Pyrite>>

<<Min: 291.9 - 296.7 1% Min: Pyrrhotite>>

<<Alt: 291.9 - 296.57 Weak Calcite>>

<<Alt: 291.9 - 298.08 Weak Muscovite>>

<<Struc: 295 - 296 Moderate-Strong dominant foliation>>

**296.57 300.40 RHYva Coarse grained to ash tuff**

296.57 - 300.4: Mixed unit; ash-PEL-lpl. 298.80 - 300.40m: Increase in chl and biotite (Bippo) plus qtz - calcite veined, sheared.

<<Min: 296.7 - 298.61 0.1% Min: Pyrite>>

<<Min: 296.7 - 298.61 3% Min: Pyrrhotite>>

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|---|---|---|

<<Min: 298.61 - 304.85 0.5% Min: Pyrite>>

<<Alt: 296.57 - 298.08 Weak-Moderate Calcite>> veins, bands, fracture filling and diss in PEL band.

<<Alt: 298.08 - 298.61 Moderate Calcite>>

<<Alt: 298.08 - 304.85 Moderate Chlorite>> diss, blebs-clots and rare bands.

<<Alt: 298.08 - 304.85 Weak-Moderate Biotite>>

<<Alt: 298.61 - 300.4 Weak-Moderate Calcite>> veinlets in shear zone

<<Vein: 296.57 - 297.33 50% Quartz-Carbonate 75 deg. >> qtz and calcite plus qtz-calcite veining in altered zone at contact

<<Struc: 296.75 - 296.95 Weak-Moderate Fault>> minor gouge

<<Struc: 298.81 - 300.4 Moderate-Strong Fault>> gouge zone, contorted foliation

**300.40 304.85 RHYva Coarse grained to ash tuff**

300.4 - 304.85: Heterogeneous unit: variable biotite (Bippo) - chl alteration, local bleaching, section of MDSt (303.37-303.60).

<<Alt: 300.4 - 304.87 Weak Calcite>>

<<Vein: 300.4 - 300.87 100% Quartz-Chlorite>> white qtz, 10% chlorite bands, 5% biotite band

<<Vein: 303.7 - 304 10% Quartz 80 deg. >>

<<Struc: 301 - 314 Moderate dominant foliation>>

<<Struc: 302.8 - 302.9 Weak-Moderate Fault>> crushed core

<<Struc: 303.9 - 310 Moderate Fault>> numerous zone of crushed, broken and gouge zones, missing core.

**304.85 305.30 MDSc Carbonaceous dominant mudstone**

304.85 - 305.3: fault zone brx, calcite vein clasts.

<<Min: 304.85 - 308.8 1% Min: Pyrite>>

<<Alt: 304.87 - 309.73 Weak-Moderate Calcite>> veins, bands and diss

<<Vein: 305.05 - 306.9 20% Calcite 80 deg. >> very poor rec'y in zone

**305.30 308.90 MDSt Rhyolite tuff dominant mudstone**

305.3 - 308.9: tectonic sheared and brecciated

<<Min: 308.8 - 309 1% Min: Pyrrhotite>>

<<Vein: 307.5 - 307.8 15% Quartz-Carbonate 75 deg. >> fault zone

| From (m) | To (m) | Rocktype & Description |
|---|---|---|
| **308.90** | **314.53** | **PEL** **Equigranular biotite + calcite +/- quartz rock** |

308.9 - 314.53: green intensely chl altered, up to 5%light brown garnets avg 0.5cm across. Trace diss cpy and very fine grained silver sulfide.

<<Min: 308.9 - 314.33 0.1% Min: Sphalerite>> rare hairlne bands, very rare diss.

<<Min: 309 - 314.3 0.5% Min: Pyrite>> and as blebs

<<Min: 311 - 312.8 0.1% Min: Chalcopyrite>>

<<Min: 314.3 - 323.7 0.5% Min: Pyrite>>

<<Alt: 308.9 - 314.33 Moderate Garnet>>

<<Alt: 308.9 - 314.33 Strong Chlorite>>

<<Alt: 308.9 - 314.33 Weak-Moderate Biotite>>

<<Alt: 309.73 - 313 Trace Calcite>>

<<Alt: 313 - 314.3 Trace Calcite>>

<<Alt: 314.3 - 317.9 Weak-Moderate Calcite>> calcite veins

<<Struc: 310 - 316 Weak-Moderate Fault>> abundant thin gouge - clay zones on foliation, minor crushed zones, locally weakly brx.

| From (m) | To (m) | Rocktype & Description |
|---|---|---|
| **314.53** | **323.70** | **RHY** **undifferentiated rhyolite** |

314.53 - 323.7: Unit is tectonic brx-faulted-sheared, minor gouge zones, missing core and abundant broken core (all causing drilling difficulties). 10cm section of MDSc at 316m, siliceous sections 311-323.7m, possibly banded chert. Calcite vein 317.5-317.9m. Locally abundant black Bippo on folia.

<<Alt: 314.53 - 315.8 Weak Chlorite>>

<<Alt: 314.53 - 323.7 Weak-Moderate Biotite>>

<<Alt: 317.9 - 323.7 Trace Calcite>>

<<Vein: 317.5 - 317.9 90% Calcite>> vein in fault zone, brecciated

<<Struc: 316 - 323.7 Strong Fault>> Missing core, broken core, numerous gouge zones.

**End of Hole @ 323.7**

| From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---|---|---|---|---|---|---|---|
| 310.00 | 311.50 | 1.50 | D00005566 | -0.005 | 0.8 | 0.04 | 0.01 | 0.15 |
| 311.50 | 313.00 | 1.50 | D00005567 | 0.01 | 2.1 | 0.18 | 0.01 | 0.59 |
| 313.00 | 314.53 | 1.53 | D00005568 | -0.005 | -0.3 | -0.01 | -0.01 | 0.05 |